

REMARKS

This paper is in response to the official action of March 18, 2009, wherein (a) claims 1-3, 6, 8-16, 36-39, and 41-44 stand rejected under 35 U.S.C. § 102 as anticipated by *Leopold* (U.S. Pub. No. 2002/0173839); (b) claims 46 and 47 stand rejected under 35 U.S.C. § 102 as anticipated by *Fischell et al.* (U.S. Patent No. 6,086,604); (c) claims 4, 5, 7, 17, 40, 18-23, 25, 45, 24, and 26 stand rejected under 35 U.S.C. § 103 as obvious in light of *Leopold* either alone or in combination with *Pacetti* (U.S. Publication No. 2002/0188345), *Da Silva* (U.S. Patent No. 6,729,336), and/or *Smith et al.* (U.S. Publication No. 2002/0156525).

Applicant appreciates the examiner's removal of the previous rejection. However, applicant respectfully, but strongly traverses the current rejection. The current rejection, like the rejection before, is factually insufficient, because in fact the stent structures pointed to by the examiner are not planar structures as recited in the claimed subject matter. Reconsideration and withdrawal of the rejections is respectfully requested.

Applicant also respectfully questions how the patent office is reasserting *Leopold* after applicant had previously shown the deficiencies in that reference, and after the patent office recognized those by removing previous rejections based thereon. In the November 2007 official action, the examiner raised *Leopold* in rejecting claim 1. At the time, the examiner has pointed to the stent shown in Figure 3 of *Leopold*. In response, applicant successfully distinguished over *Leopold*, noting that the reference did not teach a planar structure or the recited continuous side beams. In the July 10, 2008 official action, the examiner removed the rejection and replaced it with a rejection of claim 1 based on *Fischell et al.*. Despite minimal claim amendment, the examiner has now reasserted *Leopold*, citing to Figures 19-21 this time. These figures, however, share the same deficiencies as previously noted with respect to Figure 3 of *Leopold*, notably that the structure is not a planar structure and the structure does not have a side beam that extends continuously along a longitudinal axis.

Claim 1 recites, *inter alia*, "a planar structure expandable into a 3-D structure." Claim 36 recites a stent having "a planar structure in a non-expanded position and

expandable into a 3-D structure in an expanded position.” None of the prior art teaches such subject matter.

While Figures 19-21 of *Leopold* may illustrate a stent having longitudinally offset arcuate loop sections, and connecting segments or hinges, the stent is never described as being in a planar state. Figure 19 is described as illustrating a stent “in a deployed state.” See, *Leopold* [0039]. A deployed stent is to have a generally tubular shape, consistent with the vessel within which it is to be mounted. The Abstract even describes the invention as pertaining to a stent including “a cylindrical frame.” Returning to [0039], *Leopold* states that that the stent shown in Figure 19 is formed from a laser cut piece of “hypotubing.” Hypotubing is just that, tubing, i.e., a cylindrical shaped miniature structure. It is not a planar structure. Figure 19 is described as a plan view; and Figure 21 is described as a side view thereof. If Figure 20 were a side view of a planar structure it would be flat thin horizontal piece. Instead, the illustration in Figure 20 demonstrates that the stent has dimensionality from a plan view (Figure 19 looking from the top/bottom), as well as from the side view (Figure 20 looking from the side). Paragraph [0072] goes on to describe that that the arcuate sections 128 are generally semicircular in shape when “viewed along the axis of the stent.” It is respectfully submitted that if the structure is curved when viewed on axis, it is not planar. *Leopold* does say discuss that some stents can be flattened and stretched for placement within a guiding catheter [0076]. As applicant stated before, flattening does not necessarily connote planar. In this instance, though, flattening does not appear to correspond to the embodiments of Figures 19-21. Paragraph [0073] says that the due to the accurate loop sections 132, “this configuration of the stent may not be longitudinally stretched,” which means that it would not be flattened either. Instead, the configuration of Figures 19-21 is described as having a chevron and bow configuration which is for radially compression. See, [0073] and [0076]. Simply stated, the examiner has pointed to nothing that establishes that the stent of Figures 19-21 is ever in a planar condition.

Furthermore, Figures 19-21 fail to teach the rest of recited subject matter. Connecting segments 126 are not first and second side beams that extend continuously along a longitudinal axis of the apparatus. The segments merely serve as hinges connecting one arcuate loop section 132 to another loop section 132. And there are two such connecting

segments 126 per loop section 132. These segments are not continuous along a longitudinal axis. Each segment extends from one section 132 to the next and then stops – thus Leopold requires a “plurality” of such segments. The point is also highlighted by the office action’s argument that the half frames 122 and 124 serve as spaced cross-bands connecting the side beams. Each loop section 132 connects to two different connecting segments 126. A fortiori, the stent cannot be said to have one side beam that extends continuously along a longitudinal axis, much less two extending side beams, as recited. Further still, Leopold would have to show such structures in a planar structure; and as stated above, none of Figures 19-21 are illustrating a planar structure, and there is nothing in Leopold that says they pertain to a planar structure.

In contrast to *Leopold*, the present application describes planar structures having side beams (see, merely for example 14, 24, or 44) that extend continuously along the device when in the planar, or non-expanded, position. The side beams 24, for example, extend across each of the cross-bands 26 and ultimately form part of the stent device in the 3-D, or expanded, position. See, e.g., FIG. 1c. Such side beams may provide the advantage of longitudinal compliance and structural rigidity, and thereby allow the cross-bands to unfold properly during deployment.

For at least the foregoing reasons, the rejection of claim 1 is traversed and reconsideration requested. Claim 1 and the claims depending therefrom are in condition for immediate allowance. This includes, newly added claim 47 which recites that “the first and second side beams are on opposing sides of the planar structure.” The rejections of independent claim 36 and the claims depending therefrom (including newly added claim 48) are traversed for similar reasons.

Independent claim 46 stands rejected based on *Fischell et al.* The examiner notes that claim 46 recites the unitary stent structure being in a plane, but does not require the structure itself be planar. However, applicant respectfully reiterates that the stent highlighted in *Fischell et al.* is never described as residing in a plane, whether planar or not. Rather, the opposite is the case. The stent in figures 6-9 is tubular. The illustration is a side view and may be misperceived as falling within a plane – the descriptions tell otherwise. At column 2, figure 6 is described as showing a side-view in which the ovals have been “folded into a

small diameter cylinder that is placed around a deflated balloon.” Figure 7 is described as showing multiply folded ovals around a balloon. Figure 8 is a side view of the stent “post-deployment,” and therefore not within a plane. Figure 9 is a side view of a stent etched out of “a small diameter metal cylinder.” Summarized differently, the stent examples highlighted by the office action all involve a stent in various states of cylindrical shape. The stents can be collapsed somewhat to form a smaller diameter cylinder, but they still form a cylinder. The stents are never described or illustrated as being in a plane, nor having cross-bands that deflect away from that plane. The stents are in various radial configurations, as loosely demonstrated by figures 2 and 5. Looking at figure 2, for example, the radius D may be reduced, but one cannot fairly say that amounts to the *Fischell et al.* cylinders being considered “a unitary stent structure disposed in a plane when in a non-expanded position,” as recited in claim 46. If they were in a plane, then that would further beg the question of where then are the recited cross-bands that are to deflect away from that plane. In actuality, *Fischell et al.* does not teach or suggest the recited subject matter; and the rejection of claim 46 and claims 47 depending therefrom is traversed.

In view of the above amendment, applicant respectfully but strongly asserts that the pending application is in condition for immediate allowance.

Dated: September 18, 2009

Respectfully submitted,

By 

Paul B. Stephens

Registration No.: 47,970

MARSHALL, GERSTEIN & BORUN LLP

233 S. Wacker Drive, Suite 6300

Sears Tower

Chicago, Illinois 60606-6357

(312) 474-6300

Attorney for Applicant